Linux Driver Build Instruction

Author: Donald Eubanks, Chris Stark, Arin George

Liem Le, Hanzi Yang, Jeff Brower

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1 Linux Driver Install and Run Instructions

1.1. Installation Instructions

1. Ungzip and untar the file from a directory without a "LinuxDriverV1" subdirectory:

   command: `tar -xvzf LinuxDriverV1.tar.gz`

   This will create three subdirectories under LinuxDriverV1: SigFModule, EngMgr, and HwMgr.

2. Change to the SigFModule directory.

   Command: `cd SigFModule`

3. Create the device for the SigFModule board:

   Command: `make CreateDevice`

1.2. Linux Driver Install and Run Instructions

NOTE: In order for the "make all" command to work correctly, do not attempt to install the driver/loadable kernel module or run individual pieces of the makefile separately without knowing EXACTLY what you are doing.

1. Make and install the driver/loadable kernel module and hwlib library:

   command: `cd SigFModule`

   IF TARGET SYSTEM HAS "SUDO" INSTALLED, AND USER HAS ACCESS RIGHTS TO:
   'ldconfig'
   'depmod'
   AND CAN WRITE TO
   '/usr/lib'
   '/lib/modules/<kernel version number here*>/kernel/drivers/char

   *kernel version can be found by typing "uname -r"

   THEN:

   command: `sudo make all`

command: `<user types in their login password>`

OTHERWISE, YOU MUST DO:

command: `su`
command: `<user types in the root password>`
command: `make all`

1.3. Rebuilding the driver later

1. If you wish to later rebuild the driver/loadable kernel module (optional):

2. Remove the driver from memory:
   IF TARGET SYSTEM HAS "SUDO" INSTALLED, AND USER HAS ACCESS RIGHTS TO:

   '/sbin/rmmod'

   THEN

   command: `sudo rmmod SigFM`
   command: `<user types in their login password>`

   OTHERWISE

   command: `su`
   command: `<user types in the root password>`
   command: `rmmod SigFM`

3. Follow the directions in section 1.2, "Linux Driver Install and Run Instructions".

1.4. Engine Manager

1. From the LinuxDriverV1 folder, change to the EngMgr folder:

   command: `cd EngMgr`

2. Make and install the engine manager library:
   IF THE TARGET SYSTEM HAS "SUDO" INSTALLED, AND THE USER HAS ACCESS RIGHTS TO:
   'ldconfig'
   AND CAN WRITE TO
   '/usr/lib'

   THEN:

command: `sudo make all`
command: `<user types in their login password>`

OTHERWISE:
command: `su`
command: `<user types in the root password>`
command: `make all`

1.5. XDScope demo application

1. From the LinuxDriverV1 folder,

2. command: `cd HwMgr`

3. command: `make`

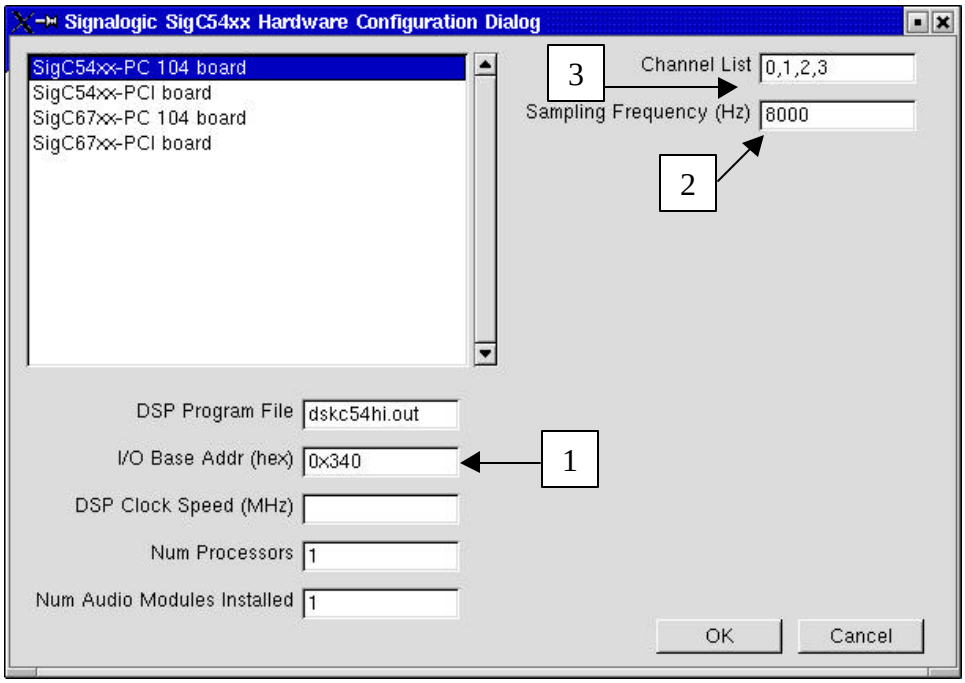
4. To run XDScope and see the digital scope display:

    1. command: `startx`
    2. Run a terminal program from within X Windows
    3. From the terminal,
    4. Change to the LinuxDriverV1 directory
    5. command: `cd HwMgr`
    6. command: `./Xpr`
    7. Enter your desired settings in the dialog (see section 1.6 for more information on the settings).
    8. Wait 5-10 seconds for output.

XDScope initializes the SigC54xx board and C54xx DSP, downloads executable DSP code (COFF file), sets DSP properties that control setup of onboard resources including memory map, analog I/O, etc, runs the DSP, and displays one buffer of analog input data processed by the C54xx DSP.

1.6 XDScope Technical Details

1. The proper base address for a PC104 board is 0x340.
2. The proper sampling rate range is 1000-32000.
3. Enter in the desired channels to be shown, with each trace being separated by a comma. The allowable range for channels is 0-3, and the maximum number of traces is four.



All other options are currently disabled.

2 Win32 Test Driver Install and Run Instructions

2.1 Unzip Signalogic_Win32Driver.zip at desired directory.

2.2 It will create the following folders

```
Signalogic_Win32Driver
   |
   |
    ---- Hwdriver32
   |
   |
    ---- Dscope32MFC
```

2.3 Compile hwdriver32.dsw project

- Open hwdriver32.dsw in Hwdriver32 directory in Visual Studio
- Press F7 to compile.

2.4 Compile Dscope32MFC project

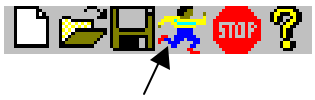
- Open Dscope32MFC.dsw in Dscope32MFC directory in Visual Studio
- Press F7 to compile.

2.5 Run Dscope32MFC project

- Click Run in Dscope32MFC project that will bring up a Dscope Window.

2.6 On Dscope Window

Click the "Running Man" icon on the toolbar to run the demo.



If there are some inputs to the analog I/O of the board, you should see the curve of the inputs plotted in a rudimentary Digital Scope display window.

2.7 Stop the board:

To stop board, click the "stop sign" icon on the toolbar.

2.8 Step 6-7 can be repeated during execution of the program.